ing mass are properly timed to bring about the increasing amplitudes.

The subject is treated analytically in the same journal by A. Hartwich, Vol. 17, 27, 1914. He arrives at an expression identical with that for Kepler's second law.

PAUL E. KLOPSTEG

PHILADELPHIA,
July 9, 1919

SCIENTIFIC BOOKS

Sewage Disposal. By LEONARD P. KINNICUTT, late Director Department of Chemistry, and Professor of Sanitary Chemistry in the Worcester Polytechnic Institute; C.-E. A. WINSLOW, Professor of Public Health in the Yale School of Medicine and Curator of Public Health in the American Museum of Natural History, New York, and R. WINTHROP PRATT, Consulting Engineer, M.Am. Soc.C.E. Second Edition, rewritten. New York, John Wiley & Sons, Inc.; London, Chapman & Hall, Ltd. Cloth; 6 x 9 in. Pp. 547. Illustrated. $4.00.

The first edition of this book which was reviewed by the writer in SCIENCE, February 10, 1911, Volume XXXIII., page 222, has been a successful reference book for students studying the fundamental principles of this branch of municipal sanitation. The present edition has been thoroughly revised and increased in size by about one hundred pages.

Progress has been rapid during recent years in this branch of the field of municipal sanitation. The revision of this book is timely as it is generally recognized that activities along this line, retarded by the world war, will shortly be taken up again with renewed vigor.

The style of the book is attractive and it is well arranged for use in the class room. Fundamental principles are clearly stated and use is made liberally of practical illustrations drawn from various important documents and investigations not only in this country, but abroad.

In bringing the book up to date, attention has been paid in particular to the activated sludge process, the two-story tank for the removal of suspended solids, with a comprehensive recital of advantages and disadvantages as now understood, and improvements in the fine screening of sewage, and progress in disposal of sewage sludge and the recovery of grease and fertilizing constituents from these waste products. Investigations conducted on a comprehensive scale at Cleveland, Chicago, Milwaukee and New Haven are described with summaries of results, as published. One of the merits of the book is that it is written from the viewpoints of the engineer, the chemist and the bacteriologist, thus bringing out for the consideration of the sanitarian and student the general principles of the subject from the angles stated, as is necessary in order to appreciate the practicability and efficiency of the respective methods.

The authors deserve commendation for their temperate statements on topics where current literature shows differences of opinion due presumably to variations in local conditions not as yet fully understood.

Little attempt has been made to set forth completely the most recent results obtained from the operation of plants most lately installed in this country. This may prove disappointing to some who devote themselves entirely to work in this particular field, but it is probably wise on the part of the authors to base a book for class room use on the broad historic background which as stated in the preface, forms the surest basis for real comprehension of the general principles of the subject as now understood. Teachers and students of this subject should welcome this new volume.

GEORGE W. FULLER

SPECIAL ARTICLES

THE POSSIBLE PRESENCE OF CORONIUM IN HELIUM FROM NATURAL GAS

ONE of us (Cady), with McFarland,[1] observed a number of lines in the spectra of samples of helium obtained from natural gas which did not belong in the spectra of helium,

[1] Kansas University Geological Survey, "The Composition of Natural Gas," p. 264.

[2] *Proc. Roy. Soc.*, 67, 467, 1901.

neon or hydrogen. These lines have been repeatedly observed in specimens of helium from that day to this. Living and Dewar[2] had observed some "wild" lines in specimens of Bath gas and suggested the possibility of the presence of coronium. In this connection it is interesting to note that some of the faint lines observed by us visually do correspond closely in wave-length to the coronal lines. During the past winter we have been making rather careful visual observations and find that some of the stronger of these lines belong to the swan spectrum of carbon, and are evidently due to some compound of carbon which is not completely absorbed by cocoanut charcoal at liquid air temperatures. These carbon lines are recorded in the literature as bands, but under the conditions under which we observe them appear to be sharp lines. We are adding to our equipment a quartz spectrograph for photographic observations and have under way a systematic fractionation of helium, using a number of methods, with the hope of eliminating the troublesome carbon compounds and of concentrating the unknown source of these remaining fainter lines sufficiently to enable them to be identified and thus prove or disprove the presence of coronium.

Hamilton P. Cady,
Howard McKee Elsey
University of Kansas,
Lawrence, Kansas

THE IOWA ACADEMY OF SCIENCE

The Iowa Academy of Science held its meetings in the Chemistry recitation room of the Science building of the State Teachers College at Cedar Falls, beginning at 1:30 P.M., Friday, April 25. After the preliminary business session and the general program section meetings were held. President Beyer gave his address on "Some problems in conservation" at the general meeting on Friday afternoon.

The following officers were elected for the coming year: *President*, T. C. Stephens, Morningside College, Sioux City. *First Vice-president*, Nicholas Knight, Cornell College, Mt. Vernon; *Second Vice-president*, D. W. Morehouse, Drake University, Des Moines; *Secretary*, James H. Lees, Iowa Geological Survey, Des Moines; *Treasurer*, A. O. Thomas, State University, Iowa City.

At 6:45 Friday evening a special war film was exhibited for the benefit of the academy and following this the evening was devoted to a résumé of the work of members of the academy during the war. President and Mrs. Seerley held a reception for the academy members after the meeting.

Sectional meetings were resumed Saturday morning and the business session closed the meetings. The members lunched together at 1:30 P.M.

The Iowa Section, Mathematical Association of America, held its fourth annual meeting Saturday forenoon, beginning at nine o'clock.

TITLES OF PAPERS

Zoology and Allied Subjects

A list of the birds found in Marshall county, II.: Ira N. Gabrielson.

The resistance of streptococci to germicidal agents: Henry Albert.

The correlation of art and science in the museum: Homer R. Dill.

Variations in the branches of the coelic artery in the rabbit: H. R. Werner.

An ecological survey of Dry Run, a small prairie stream. (1) The fishes: E. L. Palmer.

Animal tracks, food and disposition: is there any relation? E. L. Palmer.

Some zoological notes from the Barbadoes-Antigua expedition: C. C. Nutting.

Some interesting insect habitats in the tropics: Dayton Stoner.

Grasshopper control in Iowa: H. E. Jaques.

Some notes on the Cercopidae with descriptions of new species: E. D. Ball.

Thomisidæ of the Ames region: Ivan L. Ressler.

Notes on the occurrence of warts on cotton-tail rabbits in Iowa: J. E. Guthrie.

Medical work in the war: D. J. Glomset.

Variations in the branches of the carotid artery in the rabbit: Francis Marsh Baldwin.

Botany

Notes on the distribution of grasses of Iowa, Wisconsin, Minnesota and the Dakotas with reference to rust: L. H. Pammel.

Notes on the barberry: L. H. Pammel.

The genus Lactuca in Iowa: R. I. Cratty.

The rust on mammoth clover: W. H. Davis.

The moss and lichen flora of western Emmet county: B. O. Wolden.

The flora of Mitchell county: Mrs. Flora May Tuttle.